CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 96-164
NPDES PERMIT NO. CA0038342

WASTE DISCHARGE REQUIREMENTS FOR:

EAST BAY MUNICIPAL UTILITY DISTRICT
ORINDA WATER TREATMENT PLANT
ORINDA, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. The East Bay Municipal Utility District, hereinafter called the discharger, submitted a Report of Waste Discharge dated August 6, 1992 for reissuance of waste discharge requirements under the National Pollutant Discharge Elimination System (NPDES). The permit authorizes discharges related to operation of the Orinda Water Treatment Plant, and water supply for the east bay area.

2. This discharge, consisting of filter backwash water and excess aqueduct flows, is presently governed by Waste Discharge Requirements in Order No. 88-004, adopted by the Board on January 20, 1988. The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharger as a minor discharge.

3. The discharger owns and operates the Orinda Water Treatment Plant, which is located at 190 Camino Pablo, Orinda, Contra Costa County. The plant is one of six water treatment facilities, operated by the discharger in the east bay, that provides treatment for water prior to distribution to people in Alameda and Contra Costa Counties. The Orinda facility, which has a design capacity of 175 million gallons per day (mgd), currently treats an average of 135 mgd of raw water by coagulation, filtration, chlorination and fluoridation. Raw water is conveyed to the Bay Area from the Pardee Reservoir, located in the foothills of the Sierra Nevada, through the 90 mile long Mokelumne Aqueduct.

4. In order to provide for aqueduct corrosion protection and slime control, lime and chlorine are added to the raw water at Pardee Reservoir. An additional dose of chlorine is added at the East Bay Municipal Utility District Bixler Chlorination Facility, Bixler, Contra Costa County. The raw water as delivered to the Orinda Water Treatment Plant normally has a pH of about 9.0 and chlorine residual of 0.1 mg/l. At the filter plant, raw water passes through dual media filters that remove soil and other small particles. Both alum and a polymer are added to facilitate solids removal.

5. Every 8 to 72 hours the filters must be backwashed to remove the accumulated solids. Frequency of backwashing depends upon the quality of incoming water, which may vary with the seasons. The volume generated during each backwash varies between 100,000 and 300,000 gallons, and depends on the number of filters backwashed. Backwash water is pumped to one of two 3/4 acre, 1.5 million gallon, concrete lined settling basins located adjacent to the filter plant, constructed for removal of suspended solids prior to discharge to San Pablo Creek. The filter

design includes a system that collects any water leakage that occurs. Water collected in this system is piped to the settling basins.

6. Discharge from Outfall E-003 consists of supernatant from the backwash water settling basins. The supernatant is discharged to San Pablo Creek, a water of the State and the United States, via Outfall E-003 [Latitude 122°12'08"; Longitude 37°53'40"]. The supernatant is dechlorinated prior to discharge.

7. The basins alternate between active and passive modes of operation. One basin receives washwater from backwashed filters, while the other holds the settled solids for removal. The settling basins are designed to store approximately two months of washwater solids production. After approximately two months of service, the active basin is taken out of service, and washwater flows are diverted to the other basin. Supernatant is intermittently released to San Pablo Creek from the active basin.

8. During the period from January 1993 through June 1996, the average daily flow rate at Outfall E-003 was 2.6 mgd, with a maximum daily flow of 9.9 mgd. The average total suspended solids concentration during the period from January 1993 through June 1996 was 6 mg/l. The average settleable solids concentration was < 0.1 ml/l/hr, and average pH was 7.5.

9. Accumulated solids from the bottom of the basins, with an estimated .5% to 3.0% solids content, are pumped from the passive settling basin to a tank truck loading station at the filter plant. Tank trucks haul the solids to the discharger's wastewater treatment plant in Oakland, Alameda County.

10. Outfalls E-001 & E-002 provide for discharge of raw aqueduct water flows in excess of plant intake. During the period from January 1995 through June 1996, the average daily combined flow from these outfalls was 23.3 mgd, with a maximum of 48.1 mgd. Approximately 88% of the flow is discharged to Outfall E-002 [Latitude 37°53'33"; Longitude 122°11'7"], and the remaining 12% flows to Outfall E-001 [Latitude 37°53'35"; Longitude 122°11'2"]. Aqueduct release water is dechlorinated prior to discharge. A Site Map showing discharge locations is included as Attachment A.

11. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (State Board) and the Office of Administrative Law on July 20 and November 13, respectively, of 1995. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface and ground waters.

12. Effluent limitations in this permit are based on the plans, policies, and water quality criteria of the Basin Plan, and Applicable Federal Regulations (40 CFR Parts 122 and 131).

13. The Basin Plan contains water quality objectives and beneficial uses for San Francisco Bay and contiguous waters. The beneficial uses of San Pablo Creek and San Pablo Reservoir are as follows:

San Pablo Creek	San Pablo Reservoir
· Fish Migration	· Cold Fresh Water Habitat
· Water Contact Water Recreation	· Municipal Water Supply

Beneficial uses of receiving waters, continued:

San Pablo Creek	San Pablo Reservoir
· Non-contact Water Recreation	· Water Contact Recreation
· Fish Spawning	· Non-contact Water Recreation
· Warm Fresh Water Habitat	· Fish Spawning
· Wildlife Habitat	· Warm Fresh Water Habitat
	· Wildlife Habitat

14. The Basin Plan prohibits the discharge of wastewater which has characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof. Discharge of wastewater to San Pablo Creek is contrary to this prohibition.

15. The Basin Plan states that exceptions to the above prohibition will be considered for discharges where: 1) an inordinate burden would be placed on the discharger relative to beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability; or, 2) it can be demonstrated that net environmental benefits will be derived as a result of the discharge.

16. Studies performed in the early 1980's indicated that invertebrate populations in San Pablo Creek were lower than expected, and that fish hatching conditions were compromised. Efforts were made by the discharger to determine the relative degree to which solids in the backwash discharge, or high pulse flows from both the backwash water and the aqueduct releases, were responsible for the impacts. These studies were, for the most part, inconclusive. During the same period, the discharger investigated the possibility of transporting backwash water directly to San Pablo Reservoir as a means to eliminate discharge to the creek. Due to high pumping costs, and uncertainties concerning possible detriment to aquatic life in the reservoir, the project was abandoned. After further evaluation of other alternatives, the discharger proposed to construct settling basins for the backwash water, for solids separation and thickening.

17. In 1988, the Board granted an exception to a prohibition, and language similar to that in Finding 14, that was present in the 1986 Basin Plan. This exception was based on the discharger's proposal to construct the settling basins for removal of solids in the backwash water prior to discharge. Construction of the basins has significantly reduced suspended solids concentrations, and has also helped to equalize backwash water flows to San Pablo Creek.

18. Upon reevaluation of the discharge to San Pablo Creek, where conditions do not provide for a 10:1 dilution for the discharge, the Board finds that an exception to the Basin Plan is still warranted. This determination is based on the discharger's intent to continue efforts to improve the quality of effluent discharged to the creek through reduction of chlorine residual violations, equalization of flows, and monitoring of impacts to the creek. Further, economic considerations of eliminating the discharge are similar to findings upon reissuance of the permit in 1988.

19. Impacts to the creek from the discharge have not been evaluated to any significant extent since the permit was reissued in 1988. To provide current data on the status of the creek, this Order requires monitoring of invertebrate populations for a period of eighteen months and, if deemed

necessary, assessment of fish spawning conditions will be performed. If impacts to the creek are found to be significant, this permit may be reopened for the Board's consideration of the findings, and proposed mitigation measures.

20. Chlorine residual in discharge of waste to surface waters is of concern due to its toxicity to aquatic life. For this reason, this Order requires dechlorination of both the backwash water and the raw aqueduct excess prior to discharge to the creek. As part of an overall plant improvement project, to be completed during the winter of 1996, the discharger is in the process of upgrading the chlorine monitoring and dechlorination systems for all discharges. Chlorine residual in each flow will be monitored continuously, and chemical dosage for dechlorination will be automatically triggered to accommodate any changes in chlorine residuals. Instrumentation for transmission of monitoring data to the operations center is being installed. Adequate spill containment for chemical storage areas will also be provided.

21. Mokelumne aqueduct releases at Outfalls at E-001 and E-002 are not continuous, as the need for release depends on the demand for water in the community. Demand varies with the season, as well as in response to day to day weather conditions. Release timing and flow conditions are difficult to predict, and flow conditions can change rapidly from zero, to upwards of 10,000 gallons per minute. Until continuous monitoring capability is available sometime during the first half of 1997, the dechlorination feed will be operated manually, as currently done at Outfalls E-001 and E-002.

22. Because the timing and flow conditions of the discharge are difficult to predict, each time the flow starts, or fluctuates significantly, a period of discharge occurs before the dechlorination becomes effective. Thus, during this lag time, water with a chlorine residual of about 0.1 mg/l is discharged to the creek. The discharger is working to eliminate this lag time in the design of the new continuous monitoring system. Cease and Desist Order No. 96-165 has been issued to the discharger for addressing this ongoing intermittent violation of the chlorine residual requirement specified in this Order.

23. The discharger has expressed concern that current technology, in combination with space constraints at the site, will not allow for complete elimination of the lag time. If the discharger determines that complete elimination of the lag time is not feasible, this permit may be reopened to allow for the Board's consideration of findings that result from compliance with the Cease and Desist Order.

24. The discharger is evaluating the feasibility of eliminating discharge from Outfall E-001, in order to consolidate continuous chlorine residual monitoring and dechlorination operations at one location at Outfall E-002. If hydraulic conditions do not allow for terminating regular discharge from Outfall E-001, then continuous monitoring for chlorine residual, along with an automatic dechlorination system, will be installed at this outfall. They are also exploring the possibility of installing a level sensing device in the aqueduct upstream of the Orinda Water Treatment Plant. This device should allow a lead time for start up of the dechlorination system each time the flows are initiated, thus eliminating or minimizing the lag time. In addition, the discharger is evaluating multiple methods for monitoring chlorine residual by conducting pilot-studies at the facility using an oxidation reduction potential continuous monitor.

25. During the recent years, the chlorine residual requirement has been exceeded for the supernatant discharge at Outfall E-003 on a number of occasions. A number of these violations may have been related to problems with the dechlorination system; however, in 1996, it was determined

that chlorine residual violations were more prevalent during or after decanting operations between the basins. One possibility is that solids are stirred up from the bottom of the basins during decanting operations. The solids slurry may contain compounds that interfere with the measurement of chlorine residual during monitoring. Alternatively, the solids may be interfering with the chlorine residual analyses. Additional sampling revealed that a chlorine residual appeared to be present even with excess sulfur dioxide present in the sample. The discharger and their consultant have so far been unable to determine the specific cause of this chlorine residual problem, or if chlorine residual is actually present in the effluent. The Cease and Desist Order described in Finding 22 requires that the discharger take action to ensure compliance with permit requirements at E-003.

26. Operations and Maintenance procedures are maintained by the discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain useful and relevant, the procedures shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.

27. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.

28. The discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations.

29. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the East Bay Municipal Utility District (discharger) shall comply with the following for the Orinda Water Treatment Plant:

A. DISCHARGE PROHIBITIONS

1. The bypass of the backwash water dechlorination unit or settling basins is prohibited. Overflow of untreated or partially treated backwash water to waters of the State is prohibited.

2. No sludge (solids settled from backwash water and removed from the basins for transport to the discharger's wastewater treatment plant) shall be discharged into watercourses or waters of the State.

3. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by this NPDES permit, to a storm drain system or waters of the State are prohibited.

4. Storm water discharges shall not cause pollution, contamination, or nuisance.

B. EFFLUENT LIMITATIONS

1. The discharge, to San Pablo Creek of treated backwash water and water leakage from the filters through Outfall E-003, and excess aqueduct flows through Outfalls E-001 and E-002, shall not exceed the following limitations:

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
Outfall E-003:					
a. Total Suspended Solids	mg/l	30	45	60	--
b. Settleable Matter	ml/l-hr	0.1	--	--	0.2
Outfalls E-001, E-002 & E-003:					
c. Chlorine Residual [1]	mg/l	--	--	--	0.0

[1] Requirement defined as below the limit of detection in standard test methods defined in *Standard Methods for the Examination of Water and Wastewater.*

2. The pH of the discharge to Outfalls E-001, E-002 & E-003 shall not exceed 8.5 nor be less than 6.5, unless the intake water has a pH greater than 8.5, in which case all discharges shall not have a pH greater than that of the intake water. In any event, the pH shall not be greater than 9.5.

3. Backwash Water Acute Toxicity:

   Representative samples of the treated backwash water shall meet the following limits for acute toxicity: The survival of test fish, as specified by the Executive Officer in the Self-Monitoring Program, in parallel 96-hour bioassays using undiluted backwash water shall be an eleven (11) sample 90 percentile value of not less than 90 percent survival. The 90th percentile effluent limitation is defined as follows: a bioassay test showing survival of less than 90 percent represents a violation of this effluent limit if one or more of the past ten or less bioassay tests show less than 90 percent survival.

C. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State any one place within one foot of the water surface:

   a. Dissolved Oxygen 5.0 mg/l, minimum

      The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

   b. Dissolved Sulfide 0.1 mg/l, maximum

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board may revise and modify this Order in accordance with such more stringent standards.

D. PROVISIONS

1. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 88-004, which is hereby rescinded.

2. Where concentration limitations in mg/l or μg/l are contained in this Permit, the following Mass Emission Limitations shall also apply.

   (Mass Emission Limit in kg/day = (Concentration Limit in mg/l) x (Actual Flow in million gallons per day averaged over the time interval to which the limit applies) x 3.78 (conversion factor)).

3. Basin Operation: The backwash settling ponds shall be operated so as to optimize solids settling.Operation should be assessed annually based on the previous twelve months of total suspended solids data. If the basins' performance appears to be significantly compromised, the discharger shall initiate efforts to modify the pond design and/or operation to provide for adequate reduction in total suspended solids prior to discharge.

4. Basin Inspection and Maintenance: The settling basins shall be inspected every two years, and after any significant earth movement the occurs in the area due to earthquakes. The integrity of the concrete liner shall be assessed, both with respect to the durability of the material, and for the presence of cracks that could provide conduits for leakage. The biannual inspection report shall be satisfactory to the Executive Officer, and results shall be submitted along with the Annual Report. The first report shall be submitted no later than February 15, 1997. The submittal shall include plans for corrective actions should they be necessary in order to ensure adequate containment of the backwash water and solids. Any

leakage detected from the underdrain system during the time between the biannual inspections shall be reported in the quarterly Self-Monitoring Reports.

5. Plan for Oversight, Operation, and Maintenance of Chlorine Residual and Dechlorination Monitoring Instrumentation: The discharger shall submit a Management Plan for the chlorine monitoring and dechlorination systems. This Management Plan shall be satisfactory to the Executive Officer, and submitted by March 1, 1997. This plan shall describe in detail the chlorination and dechlorination systems, and monitoring including any alarm, transmission, and operator control aspects. A discussion of appropriate staffing for oversight of the system shall be included. As necessary, this plan shall be revised each year to reflect changes in operation.

6. Annual Report on San Pablo Creek - The discharger shall submit an annual report documenting findings from ongoing seasonal monitoring of the creek conditions, both upstream and downstream of the discharge points. This report shall be satisfactory to the Executive Officer, submitted no later than July 1 of each year. This report shall include seasonal stream flow information for the creek, and hydrographs showing the relative flow contributions from the backwash water and aqueduct discharges.

7. Monitoring of San Pablo Creek - The discharger shall develop and implement a plan for monitoring invertebrate populations in San Pablo Creek both upstream and downstream of the permitted discharges. Monitoring of invertebrate populations shall be performed at least quarterly for eighteen months. A proposed plan for the monitoring shall be submitted for Executive Officer approval, no later than February 1, 1997. If necessary, evaluation of other factors potentially effecting fish populations, such as spawning conditions, should also be provided. A report documenting the findings of this study shall be submitted no later than November 1, 1998. This report shall be satisfactory to the Executive Officer, and shall include a detailed assessment of the findings, and discussion of impacts, if any, due to flow fluctuations. To the degree that data is available, summary information of invertebrate populations in other local creeks shall be included. If invertebrate populations appear to be compromised as a result of the discharge, the discharger shall submit a proposed mitigation plan acceptable to the Executive Officer. This plan shall be submitted by January 1, 1999.

8. Description of Discharge and Creek Flows - The discharger shall submit a report documenting flow variations at the three discharge locations, including examples of typical scenarios, constraints in equalizing the discharge flows, and seasonal flow variations upstream of the facility. This report shall be satisfactory to the Executive Officer, and shall be submitted no later than March 15, 1997.

9. Storm Water Pollution Prevention Plan: The discharger shall develop and implement a Storm Water Management Plan in accordance with the attached "Standard Storm Water Provisions". This plan shall describe the management and handling of storm water runoff from the facility, and measures taken to prevent contamination of storm water or discharge of pollutants with the storm water. As part of the Management Plan, the discharger shall 1) identify, on a map of appropriate scale, the areas which contribute runoff to storm water drains, and, 2) describe the activities on each area and the potential for contamination of the runoff. This plan shall provide for development of employee awareness of best management practices for storm water management, and specific site considerations. The Management Plan shall be satisfactory to the Executive Officer, and shall be submitted no later than July 1, 1997. Henceforth, the discharger shall evaluate and update the plan by July 1 of each

year, or sooner if there is a change in the operation of the facility which may substantially affect the quality of storm water discharged from the facility.

10. Operations and Maintenance Procedures - The discharger shall review, and update as necessary, its Operations and Maintenance Procedures, annually, or within a reasonable time period after completion of any significant facility or process changes. The report describing the results of the review process including an estimated time schedule for completion of any revisions determined necessary, and a description or copy of any completed revisions, shall be submitted to the Board as part of the Annual Report, as described in Section F.5, Part A, of the attached Self-Monitoring Program.

11. Contingency Plan - Annually, the discharger shall review and update as necessary, its Contingency Plan as required by Board Resolution 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code. Plan revisions, or a letter stating that no changes are needed, shall be submitted to the Board as a part of the Annual Report, as described in Section F.5, Part A, of the attached Self-Monitoring Program.

12. Self-Monitoring Program - The discharger shall conduct monitoring in accordance with the attached Self-Monitoring Program as adopted by the Board. The Self-Monitoring Program may be amended by the Executive Officer pursuant to USEPA regulations 40 CFR 122.62, 122.63, and 124.5.

13. Reopener - The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order are causing or significantly contributing to adverse impacts on water quality and/or beneficial uses of the receiving waters.

14. Signatory and Certification - All applications, reports, or information submitted to the Board shall be signed and certified pursuant to USEPA regulations 40 CFR 122.41(k).

15. Standard Provisions - The discharger shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements " dated August 1993, or any amendments thereafter.

16. Change in Control or Ownership - In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation of this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. (Refer to Standard Provisions, referenced above).

17. Permit Expiration - This Order expires on December 18, 2001. The discharger must file a Report of Waste Discharge in accordance with Title 23 of the California Code of Regulations, not later than 180 days in advance of such date, as application for issuance of new waste discharge requirements.

18. Effective Date of the Permit - This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional Administrator, USEPA, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

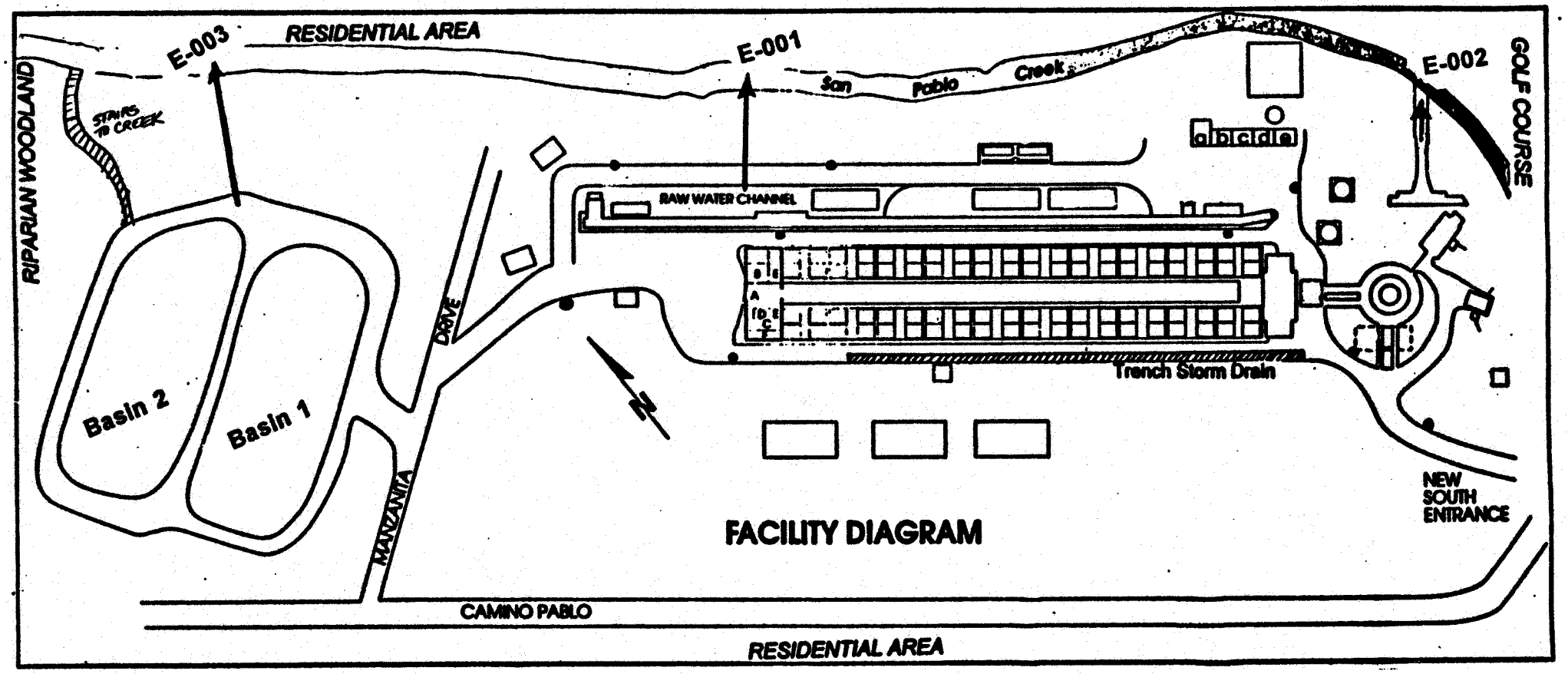
I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 18, 1996.

for LORETTA K. BARSAMIAN
Executive Officer

Attachments:

A. Site Map
B. Self-Monitoring Program
C. Standard Storm Water Provisions
D. Statement of Basis
E. Standard Provisions and Reporting Requirements - August 1993
F. Contingency Plan - Resolution 74-10

ORINDA WATER TREATMENT PLANT



ATTACHMENT A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

EAST BAY MUNICIPAL UTILITY DISTRICT
ORINDA WATER TREATMENT PLANT
CONTRA COSTA COUNTY

NPDES NO. CA0038342
ORDER NO. 96-164

CONSISTS OF

PART A (August 1993)
&
PART B

SELF-MONITORING PROGRAM
PART B

EAST BAY MUNICIPAL UTILITY DISTRICT
ORINDA WATER TREATMENT PLANT

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT & INTAKE

Station	Description
I-1	At any point in the raw water supply prior to any treatment.

B. EFFLUENT

Station	Description
E-003	At any point in the outfall pipe between the point of discharge into San Pablo Creek and the point at which all waste tributary to that outfall is present.
E-001 & E-002	At any point between the Mokelumne Aqueduct diversion structure, and the point where the Mokelumne water actually enters the Creek.

C. RECEIVING WATERS

Station	Description
C-1	At a point in the center of San Pablo Creek, located at least 20 feet upstream from the point of any waste discharges.
C-2	At a point in San Pablo Creek, located at least 75 feet downstream from E-003.

D. LAND OBSERVATIONS

Station	Description
P - 1 through P -`n'	Located along the periphery of the water and washwater treatment facilities, at equidistant intervals not to exceed 200 feet. (A sketch showing the locations of these stations will accompany each annual report).

E. OVERFLOWS AND BYPASSES

Station	Description
O - 1 through O -`n'	Bypass of the washwater control facilities, or overflow from chemical storage facilities. Any known bypass or overflow locations shall be noted on a map to be included with the annual report.

II. REPORTING REQUIREMENTS

A. General Reporting Requirements are described in Section E of the Board's "Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits", dated August 1993.

B. Self-Monitoring Reports for each calendar quarter shall be submitted quarterly, by the fifteenth day of January, April, July and October in accordance with Section F.4 of Part A.

C. An Annual Report for each calendar year shall be submitted to the Board within 60 days after the end of the year. The required contents of the annual report are described in Section F.5 of Part A.

D. Any overflow, bypass, or any significant non-compliance incident that may endanger health or the environment shall be reported in accordance with Sections F.1 and F.2 of Part A, and any additional reporting guidance provided by the Board staff.

III. MODIFICATIONS TO PART A & STANDARD PROVISIONS AND REPORTING REQUIREMENTS

A. This monitoring program does not include the following sections of Part A: C.5 and E.5.

Section E.3 is revised to read: "A tabulation shall be maintained showing the total monthly volume of sludge removed from the settling basins (in cubic yards or cubic feet)."

B. The second sentence of Section F.1, Spill Reports, is revised to read as follows: "Spills shall be reported to this Regional Board (510-286-1255 on weekdays during office hours from 8 a.m. to 5 p.m.), and to the Office of Emergency Services (800- 852-7550 during non office hours) immediately after the occurrence.

Section F.1.b is revised to read: "Best estimate of volume involved".
Section F.1.d is revised to read: "Cause of spill or overflow".
Section F.1.i is revised to read: "Agencies or persons notified".

IV. SCHEDULE OF SAMPLING AND ANALYSES

A. The schedule of sampling and analysis shall be that given in Table 1 (attached).

B. Sample collection, storage, and analyses shall be performed according to requirements in the latest 40 CFR 136, in the Permit, or as specified by the Executive Officer.

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Order No. 96-164.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer, pursuant to 40 CFR 122.62 and 124.4.

LORETTA K. BARSAMIAN
Executive Officer

Effective Date: 12-31-96

Attachments:
Table 1 - Schedule of Sampling, Measurement and Analysis
Part A, dated August 1993

EAST BAY MUNICIPAL UTILITY DISTRICT
ORINDA FILTER PLANT - NPDES Permit No. CA0038342
Self-Monitoring Program, Attachment A

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station:	E-003		E-001 & E-002		I	L	O	C
Type of Sample: / **Parameter** (units) [notes]	G	Cont	G	Cont	G	Ob	Ob	G Ob
Flow Rate (mgd) [1]		D		D				Q
Total Susp. Solids (mg/l & kg/d)	3/W							
Chlorine Residual (mg/l) [2]	Continuous		Continuous					
Settleable Matter (ml/l-hr)	W							
Acute Toxicity (% Surv.) [3]	Q							
pH (units)	Continuous		Continuous					
Turbidity (NTUs) [4]	2W		2W		2W			M
All Applicable Standard Observations	2/W					Q	E	M

LEGEND FOR TABLE 1:

Types of Stations

I = Raw Water
E = Backwash Water & Aqueduct Release Discharge Stations
O = Overflow and Bypass Points
P = Treatment Facility Perimeter
C = Receiving Water
L = Pond Levee Stations

Frequency of Sampling

D = Once each day
W = Once each week
M = Once each month
A = Once each year
Q = Once each calendar quarter (with with at least two month intervals)
E = Each occurrence

Types of Samples

Co = Continuous
C-24 = 24-hour composite
G = Grab
Ob = Observations

FOOTNOTES FOR TABLE 1

[1] Flow Monitoring: Flows from Outfalls E-001, E-002 & E-003 shall be measured continuously, and recorded and reported daily. The following information shall also be reported, monthly: Average Daily Flow (MGD); Maximum Daily Flow (MGD); Minimum Daily Flow (MGD).

[2] Chlorine Residual: Monitor dechlorinated effluent (E-001, E-002 & E-003) continuously or, at a minimum, every 4 hours. Report, on a daily basis, both maximum and minimum concentrations, for samples taken following dechlorination. If a violation is detected, the maximum and average concentrations and duration of each non-zero residual event shall be reported, along with the cause and corrective actions taken. Continuous monitoring for chlorine residual and pH at E-001, E-002, and E-003 shall be performed beginning no later than April 1, 1997. Until that time, the monitoring frequency shall be at least every 4 hours.

[3] Bioassays: Acute toxicity shall be monitored using three spined stickleback and fathead minnows in parallel, static bioassay tests. Effluent used for fish bioassays must be dechlorinated prior to testing. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, and temperature. If a violation of acute toxicity requirements occurs, bioassay testing shall continue back to back until compliance is demonstrated.

[4] pH shall be monitored using dechlorinated effluent.

General Notes

1. Bypass Monitoring: During any time when bypassing occurs from the backwash water treatment process, the self-monitoring program shall include the following sampling and analyses in addition to the Table 1 schedule:

   a. When bypassing occurs from any treatment unit(s), grab samples on an hourly basis for the duration of the bypass event for TSS and Settleable Solids analyses, and continuous monitoring of flow and chlorine residual.

   b. When bypassing the dechlorination process, grab samples hourly for chlorine residual (or continuous monitoring); and continuous monitoring of flow.

   c. Daily receiving water sampling and observations shall be performed until it is demonstrated that no adverse impact on the receiving water is detected.

2. If any sample is in violation of limits, sampling frequency shall be increased for that parameter until compliance is demonstrated in two successive samples. Frequency shall be increased as follows: TSS, Sett. Solids: Daily; Acute Toxicity: As indicated in Footnote [3]

3. Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If the continuous monitoring system is dysfunctional for any reason for more than two hours, then grab samples shall be taken at a minimum every four hours until the automatic system is back on line.

ATTACHMENT C

STANDARD STORM WATER PROVISIONS

1. The Storm Water Management Plant shall be designed in accordance with good engineering practices and shall address the following objectives:

   a. to identify pollutant sources that may affect the quality of storm water discharges; and

   b. to identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

   The Plan may be combined with the existing spill prevention plan as required in accordance with Provision 8 of Standard Provisions and Reporting Requirements. The SWPP Plan shall be retained onsite and made available upon request of a representative of the Regional Board.

2. Source Identification. The Plan shall provide a description of potential sources which may be expected to add significant quantities of pollutants to storm water discharges, or which may result in non-storm water discharges from the facility. The Plan shall include, at a minimum, the following items:

   a. A topographic map (or other acceptable map if a topographic map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing: the wastewater treatment facility process areas, surface water bodies (including springs and wells), and the discharge point(s) where the facility's storm water discharges to a municipal storm drain system or other water body. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.

   b. A site map showing:

      i. Storm water conveyance, drainage, and discharge structures;

      ii. An outline of the storm water drainage areas for each storm water discharge point;

      iii. Paved areas and buildings;

      iv. Areas of pollutant contact with storm water or release to storm water, actual or potential, including but not limited to outdoor storage, and process areas, material loading, unloading, and access areas, and waste treatment, storage, and disposal areas;

      v. Location of existing storm water structural control measures (i.e., berms, coverings, etc.);

      vi. Surface water locations, including springs and wetlands;

      vii. Vehicle service areas;

C. A narrative description of the following:

i. Wastewater treatment process activity areas.

ii. Materials, equipment, and vehicle management practices employed to minimize contact of significant materials with storm water discharge;

iii. Material storage, loading, unloading, and access areas;

iv. Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharge;

v. Methods of onsite storage and disposal of significant materials;

D. A list of pollutants that have a reasonable potential to be present in storm water discharge in significant quantities.

3. Storm Water Management Controls. The Plan shall describe the storm water management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the Plan shall reflect identified potential sources of pollutants. The description of storm water management controls shall include, as appropriate:

a. Storm Water Pollution Prevention Personnel. Identify specific individuals (and job titles) who are responsible for developing, implementing, and revising the Storm Water Management Plan.

b. Good Housekeeping. Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm water conveyance system.

c. Spill Prevention and Response. Identification of areas where significant materials can spill into or otherwise enter the storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, clean up equipment and procedures should be identified, as appropriate. The necessary equipment to implement a clean-up shall be available and personnel trained in proper response, containment and cleanup of spills. Internal reporting procedures for spills of significant materials shall be established.

d. Source Control. Source controls, such as elimination or reduction of the use of toxic pollutants, covering of pollutant areas, sweeping of paved areas, containment of potential pollutants, labelling all storm drain inlets with "No Dumping" signs, isolation/separation of industrial from non-industrial pollutant sources so that runoff from these areas does not mix, etc.;

e. Storm Water Management Practices. Storm water management practices are practices other than those which control the source of pollutants. They include treatment/conveyance structures such as drop inlets, channels, retention/detention basins, treatment vaults, infiltration galleries, filters, oil/water separators etc. Based on assessment of the potential

of various sources to contribute pollutants to storm water discharges in significant quantities, additional storm water management practices to remove pollutants from storm water discharge shall be implemented and design criteria shall be described.

f. Sediment and Erosion Prevention. Measures to limit erosion around the storm water drainage and discharge points such as riprap, revegetation, slope stabilization, etc. shall be described and implemented;

g. Employee Training. Employee training programs shall inform all personnel responsible for implementing the Storm Water Management Plan. Training should address spill response, good housekeeping, and material management practices. Periodic dates for training shall be identified.

h. Inspections. All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering storm water discharges. A tracking or follow-up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorded. Inspection records shall be retained for five years.

i. Records A tracking and follow up procedure shall be described to ensure that adequate response and corrective actions have been taken in response to inspections. Records of inspections shall be maintained. Establishment of internal record keeping and internal reporting procedures of inspections and spill incidents.

ATTACHMENT D

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 Webster Street, Suite 500
Oakland, California 94612

STATEMENT OF BASIS
August 8, 1996 [Revised November 7, 1996]

REISSUANCE OF
WASTE DISCHARGE REQUIREMENTS
FOR DISCHARGE TO STATE WATERS

FOR

East Bay Municipal Utility District
Orinda Water Treatment Plant
Contra Costa County, NPDES Permit No. CA0038342

I. FACILITY DESCRIPTION

The East Bay Municipal Utility District (hereinafter called the District) has applied to the California Regional Water Quality Control Board (the Board) for reissuance of its NPDES permit (CA0038342) for discharge of pollutants to State waters. The District owns and operates a water treatment plant, currently regulated by Order No. 88-004, which discharges an annual average flow of approximately 2.6 million gallons per day (mgd) of filter backwash water, and an annual average flow of approximately 23.3 mgd of excess flow from the Mokolemne Aqueduct into San Pablo Creek. This plant provides treatment of drinking water for communities in both Alameda and Contra Costa Counties. The USEPA and the Board have classified the Orinda Water Treatment Plant as a minor discharger.

The filter plant is one of six in the east bay area that provides treatment for water prior to distribution to the drinking water system. The Orinda plant has a design capacity of 175 mgd, and currently treats an average of 135 mgd of raw water by coagulation, filtration, chlorination and fluoridation. Raw water is conveyed to the Bay Area from the Pardee Reservoir, located in the foothills of the Sierra Nevada, through the 90 mile long Mokelumne Aqueduct.

II. DISCHARGE DESCRIPTION

Lime and chlorine are added to the raw water at Pardee for aqueduct corrosion protection and slime control. The raw water as delivered to the Orinda Water Treatment Plant normally has a pH of about 9.0 and chlorine residual of 0.1 mg/l. At the filter plant, raw water passes through dual media filters that remove soil and other small particles. Both alum and a polymer are added to facilitate solids removal. Every 8 to 24 hours the filters must be backwashed to remove the accumulated solids. Frequency of backwashing depends upon the quality of incoming water, which may vary with the seasons. The volume generated during each backwash varies between 100,000 and 300,000 gallons, and depends on the number of filters backwashed. Backwash water is pumped to one of two 3/4 acre, 1.5 million gallon, concrete lined settling basins located adjacent to the filter plant, constructed for removal of suspended solids prior to discharge to San Pablo Creek. The filter design includes a system that collects any water leakage that occurs. Water collected in this system is piped to the settling basins.

Outfall E-003: Discharge to Outfall E-003 consists of supernatant from the backwash water settling basins. The supernatant is the upper layer of the basin water after most of the solids have settled out. This supernatant is discharged to San Pablo Creek, a water of the State and the United States, via Outfall E-003 [Latitude 122°12'08"; Longitude 37°53'40"]. The basin supernatant is dechlorinated prior to discharge to San Pablo Creek.

The basins alternate between active and passive modes of operation. One basin receives washwater from backwashed filters, while the other holds the settled solids for removal. The settling basins are designed to store approximately two months of washwater solids production. After approximately two months of service, the active basin is taken out of service, and washwater flows are diverted to the other basin. Supernatant is intermittently released to San Pablo Creek from the active basin. During the period from January 1993 through June 1996, the average daily flow rate was 2.6 mgd, with a maximum daily flow of 9.9 mgd. The general quality of this discharge during the above noted time period is as follows:

	Average	Minimum	Maximum
Total Suspended Solids, mg/l	6	2	30
Settleable Solids, ml/l/hr	<0.1	<0.1	0.2
pH (standard units)	7.5	6.7	8

Accumulated solids from the bottom of the basins, with an estimated 0.5% to 3.0% solids content, is pumped from the passive settling basin to a tank truck loading station at the filter plant. Tank trucks haul the solids to the East Bay Municipal Utility District's wastewater treatment plant in Oakland, Alameda County.

Outfalls E-001 & E-002 provide for discharge of raw aqueduct water flows in excess of plant intake. During the period from January 1995 through June 1996, the average daily combined flow from these outfalls was 23.3 mgd, with a maximum of 48.1 mgd. Approximately 88% of the flow is discharged to Outfall E-002 [Latitude 37°53'33"; Longitude 122°11'7"], and the remaining 12% flows to Outfall E-001 [Latitude 37°53'35"; Longitude 122°11'2"]. Aqueduct release water is dechlorinated prior to discharge.

III. GENERAL RATIONALE

In general, the purpose of the proposed permit requirements are to protect the beneficial uses of San Pablo Creek and San Pablo Reservoir as described in the Basin Plan (reference 3 below). The following documents establish the bases for the requirements contained in the draft permit, and are referred to under the specific rationale section of this Statement of Basis .

1. Federal Water Pollution Control Act, as amended (hereinafter referred to as the Clean Water Act).

2. Federal Code of Regulations, Title 40 - Protection of Environment, Chapter 1, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-131 (hereinafter referred to as 40 CFR specific part number).

3. Water Quality Control Plan, San Francisco Bay Basin, June 21, 1995 (hereinafter referred to as the Basin Plan). This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (State Board) and the Office of Administrative Law on July 20 and November 13, respectively, of 1995. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface and ground waters.

IV. SPECIFIC RATIONALE

The following section provides a specific rational for the proposed permit requirements in the Tentative Order.

Backwash Supernatant: Effluent limitations for the backwash water supernatant are established for total suspended solids, settleable solids, pH, acute toxicity, and chlorine residual. These parameters were regulated in the previous permit, and were established due to the nature of the backwash water supernatant. The backwash water essentially contains the concentrated solids removed from the raw water during filtration. Most of these solids settle to the bottom of the settling basins described above, and are removed periodically for hauling to the District's wastewater treatment plant in Oakland. The backwash water after settling, called the supernatant, contains relatively low concentrations of solids; however, to ensure adequate removal, the permit requires that specific limits be met for suspended and settleable solids.

Aqueduct Release: Effluent limitations for the raw water releases at Outfalls E-001 and E-002 are established for chlorine residual and pH. These parameters were regulated in the previous permit, and were included because the raw water contains chlorine which must be removed for discharge. A pH limitation is necessary because the raw water pH is adjusted upstream at Pardee Reservoir to maintain the integrity of the aqueducts. The raw water as delivered to the Orinda Water Treatment Plant normally has a pH of about 9.0, which is above the acceptable range for pH defined in the Basin Plan for discharge to shallow waters (6.5 to 8.5).

Raw water which flows from Pardee through the Mokelumne Aqueduct is of relatively high quality, with low solids content. The water is essentially snow melt, and as such, has had little opportunity to accumulate pollutants. Chemical analyses of the raw water does not indicate a reasonable potential for exceedence of Federal water quality standards for toxic constituents for fresh waters in excess flows from the aqueduct to San Pablo Creek. Monitoring data for the backwash water also does not indicate cause for concern that objectives for toxic pollutants would be exceeded. As such, the permit does not include effluent limitations for toxic pollutants.

The Basin Plan prohibits discharge of wastewater which has characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1. Discharge of wastewater to San Pablo Creek is contrary to this prohibition. The Basin Plan allows exceptions to this prohibition when an inordinate burden would be placed on the discharger relative to beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability.

Studies performed in the early 1980's indicated that invertebrate populations in San Pablo Creek were lower than expected, and that fish hatching conditions were compromised. Efforts were made by the discharger to determine the relative degree to which solids in the backwash discharge, or high pulse flows from both the backwash water and the aqueduct releases, were responsible for the impacts. These studies were, for the most part, inconclusive.

During the same period, the discharger investigated the possibility of transporting backwash water directly to San Pablo Reservoir as a means to eliminate discharge to the creek. Due to high pumping costs, and uncertainties concerning possible detriment to aquatic life in the reservoir, the project was abandoned. After further evaluation of other alternatives, the discharger proposed to construct settling

basins for the backwash water, for solids separation and thickening. In 1988, the Board granted an exception to a prohibition similar to that described above, specified in the Basin Plan in effect at the time. This exception was based on the discharger's proposal to construct the settling basins for removal of solids in the backwash water prior to discharge, and the limited options available for alternative disposal of the water. Construction of the basins has significantly reduced suspended solids concentrations, and has also helped to equalize backwash water flows to San Pablo Creek.

In addition to solids and high pulse flows, other aspects of the discharge that could impact the creek habitat are chlorine residual, pH, and residual polymer. The District is currently in the process of upgrading the chlorine residual, dechlorination, flow, and pH monitoring equipment to provide for continuous monitoring and improved process control. Once this system is on line, their ability to detect violations and implement remedial measures to protect the creek will be significantly enhanced.

Impacts to the creek from the discharge have not been evaluated to any significant extent since the permit was reissued in 1988. To provide current data on the status of the creek, this Order requires monitoring of invertebrate populations for a period of eighteen months. If it appears to be necessary, fish spawning conditions will also be assessed. The results of this study will be used to determine the need for further actions, including an assessment of the cause of impacts. These efforts by the District, in addition to installation of the continuous monitoring system will help to minimize any deleterious effects to the creek. For these reasons, the exception granted by the Board in 1988 will remain in effect.

A. Discharge Prohibitions and Effluent Limitations

The specific rationale for each of the proposed prohibitions and limits is summarized below. It should be noted that only the primary bases are listed in the table. Other bases may exist for the requirements and they are contained in the documents listed under General Rationale and in related Regional Board files. All limits are based on these rationale and best professional judgement (BPJ).

Discharge Prohibition A.1 & A.3. (no bypass or overflow; no discharge of waste to storm drains, and no discharge unless as authorized by this permit): The Basin Plan prohibits discharge of untreated wastes (Chapter 4, Discharge Prohibition No. 15). This prohibition is based on general concepts contained in Sections 13260 through 13264 of the California Water Code that relate to the discharge of waste to State Waters without filing for and being issued a permit.

Discharge Prohibition A.3. (discharge of backwash solids prohibited): Discharge of excess solids to San Pablo Creek may contribute to deposition of settleable matter on the creek bottom. These deposits can impact the functioning of the aquatic ecosystem. This permit does not allow discharge of settled backwash water solids to San Pablo Creek.

Discharge Prohibition A.4. (storm water prohibition): Operations on site, particularly during any construction project, have the potential for contributing to excess sediments or pollutants in storm water runoff. This prohibition is intended to protect the beneficial uses of San Pablo Creek from any unnecessary discharge of pollutants with storm water.

Effluent Limitations B.1.a & B.1.b. (total suspended solids & settleable solids): These effluent limitations are from the existing permit and are based on plant performance, Chapter IV of the Basin Plan (Effluent Limitation 3b), and best professional judgement.

Effluent Limitation B.1.c. (total chlorine residual): This effluent limitation is in the existing permit,

and is from Chapter IV of the Basin Plan (Effluent Limitation 3c).

Effluent Limitation B.2. (pH): This effluent limitation is in the existing permit and is based on Chapter IV of the Basin Plan (Effluent Limitation 3a).

Effluent Limitation B.3. (acute toxicity): The Basin Plan specifies a narrative objective for toxicity that "all waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses on aquatic organisms..." The acute toxicity limits are necessary to ensure that this objective is protected. The acute toxicity requirement is in the existing permit.

B. Basis for Receiving Water Limitations

Receiving Water Limitations C.1 and C.2. These limitations are in the existing permit and are based on water quality objectives for physical, chemical, and biological characteristics from Chapter III of the Basin Plan.

Receiving Water Limitation C.3. This limitation is in the existing permit, requires compliance with Federal and State law, and is self explanatory.

Receiving Water Limitation C.4 & C.5. These limitations are established to ensure that degradation of the receiving waters in San Pablo Creek does not occur as a result of storm water discharges.

C. Basis for Provisions.

Provision D.1 is based on 40 CFR 122.46.

Provision D.2 specifies mass loading limitations for regulated constituents, pursuant to Federal Regulations.

Provision D.3 requires the backwash water settling basins to be operated to optimize solids settling, and Provision D.4 requires periodic inspection of the basins' integrity. Optimal solids settling is important because discharge of excess solids to San Pablo Creek may cause unnecessary deposition in the stream channel, potentially impacting beneficial uses. Basin inspections are intended to prevent impacts to groundwater through implementation of an assessment and maintenance program.

Provision D.5 requires a specific operation and maintenance plan for the chlorine residual and pH monitoring equipment and systems. Chlorine is very toxic to aquatic life, and elevated or depressed pH can also cause severe water quality impacts. The pH of the backwash water discharge is not likely to vary significantly; however, any breakdown in the chlorine residual monitoring or control equipment and oversight could result in discharge of chlorinated water to San Pablo Creek. In order to prevent such occurrences, the District is required to ensure that adequate staffing is available to oversee the system, and that staff knowledge of equipment and repair mechanisms is at a sufficient level.

Provision D.6 requires submittal of an Annual Report on the status of San Pablo Creek, both upstream and downstream of the discharge. This report is intended to provide ongoing assessment of the creek habitat and flows, and monitoring for indications of stress.

Provision D.7 requires the District to monitor invertebrate populations in San Pablo Creek. Impact to the creek from the permitted discharges has not been studied since the early to mid 1980's. This

investigation is necessary to provide data for assessment of current impacts.

Provision D.8 requires the District to document flow variations at the three discharge locations, and in the creek both upstream and downstream of the discharge. This information will help to develop a record of flow variations in the creek that may be useful in assessing potential causes of any noted impacts.

Provision D.9 requires the District to prepare and implement a Storm Water Management Plan for the facility. This management plan is required in order to facilitate implementation of good housekeeping practices on site, aimed at preventing discharge of pollutants with storm water runoff to San Pablo Creek.

Provisions D.10 through D.18. (effective date, operations and maintenance, contingency plan, system reliability, self-monitoring program, and standard provisions): These requirements come from the Basin Plan and 40 CFR part 122 & 123.

V. SELF-MONITORING PROGRAM REQUIREMENTS

A. General Basis

Part A of the monitoring program is a standard requirement in almost all NPDES permits issued by the Regional Board. Most of the requirements are also existing requirements for the District. Part A includes definitions, specifies general sampling and analytical protocols, and specifies reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Board Policy.

Part B of the monitoring program is specific for the Orinda Water Treatment Plant. Part B defines the stations, constituents, and frequency of monitoring, and additional reporting requirements. The constituents required to be monitored include all parameters for which permit limits are specified. This is to allow determination of compliance with each of the limited constituents in accordance with 40 CFR 122.44(i).

VI. REVIEW PROCEDURES

The staff of the Regional Board has prepared draft Waste Discharge Requirements which contain effluent and receiving water limitations and special provisions, in accordance with the Federal Clean Water Act and the California Water Quality Control Act.

Interested persons are invited to submit written comments on these draft Waste Discharge Requirements. Comments should be submitted either in person or by mail to the Regional Board office at the address indicated above by December 2, 1996. Comment received after this date may not receive full consideration in the formulation of final determinations.

The draft Waste Discharge Requirements will be considered by the Regional Board at a public hearing during the Board's regular monthly meeting to be held on December 18, 1996, beginning at 9:30 a.m. The meeting will be held at the BART Headquarters Building, 800 Madison Street, 2nd Floor Meeting Room, Oakland, CA 94612.